

Appl. No.: 10/005,185
Filed: December 4, 2001
Page 2

Amendments to the Claims:

Claims 1-36 (Canceled)

37. (Currently amended) A hole forming system, comprising:

- a base table;
- a work piece table for supporting work pieces under process;
- a first drive system for moving the work piece table along a Y axis in relation to the base table;
- a plurality of spindle stations;
- a ganged set of a plurality of spindles, each spindle for holding a hole forming tool, each spindle bearing being mounted on a common linear bearing for linear movement along an X axis which is transverse to said Y axis, the spindles of said ganged set commonly connected together;
- a computer-controllable spindle linear drive system for commonly driving said ganged set of a plurality of spindles along said X axis; and
- Z axis drive system for individually driving said spindles along a Z axis which is transverse to said X and Y axis.

38. (Previously presented) The system of Claim 37 further comprising a controller for controlling said spindle linear drive system and said Z axis drive system to conduct hole forming operation's on a plurality of work pieces located at respective ones of said spindle stations.

39. (Previously presented) The system of Claim 37 further comprising adjustable mounting structure for mounting each spindle to said bearing system to align each spindle in the Z and X axis.

40. (Previously presented) The system of Claim 37, wherein said ganged set of a plurality of spindles comprises four spindles.

Appl. No.: 10/005,185
Filed: December 4, 2001
Page 3

41. (Currently amended) A hole forming system, comprising:

- a base table;
- a work piece table for supporting work pieces under process;
- a Y axis drive system for moving the work piece table along a Y axis in relation to the base table;
- a plurality of spindle stations;
- a ganged set of a plurality of spindles, each spindle for holding a hole forming tool, comprising a spindle at each said spindle station, said plurality of spindles commonly connected together for common movement along an X axis which is orthogonal to said Y axis;
- a spindle linear drive system for commonly driving said ganged set of spindles along said X axis, wherein said spindle linear drive system includes:
 - a set of spindle slides for motion along the X axis, each slide supporting a corresponding one of said plurality of spindles;
 - a linear bearing for supporting said set of spindle slides for motion along the X axis;
 - a bar structure rigidly attached to each slide to gang together said set of slides in a spaced relationship on said linear bearing for motion as said ganged set along the linear bearing; and
 - a linear force applying structure for moving the ganged set of spindles along the X axis; and
- a Z axis drive system for driving said spindles along a Z axis which is orthogonal to said X and Y axis.

42. (Previously presented) The system of Claim 41 further comprising a controller for controlling said Y axis drive system, said spindle linear drive system, and said Z axis drive systems to conduct hole forming operations on a plurality of work pieces located at respective ones of said spindle stations.

Appl. No.: 10/005,185
Filed: December 4, 2001
Page 4

43. (Currently amended) The system of Claim 41 wherein said ~~first set of spindles and said second set of~~ spindles are arranged on a common plane which is orthogonal to said work piece table.

44. (Cancelled)

45. (Currently amended) The system of Claim ~~[[44]]~~ 41 wherein said linear force applying structure includes a servo motor coupled to a leadscrew, and a leadscrew nut threaded onto the leadscrew and secured to said the ganged set.

46. (Previously presented) The system of Claim 45 wherein said leadscrew nut is secured to one slide of said first set of slides.

47. (Currently amended) The system of Claim ~~[[44]]~~ 41 wherein said linear force applying structure includes a linear motor drive system including a set of stationary permanent magnets extending along the X axis and a coil attached to said ganged set.

48. (Currently amended) The system of Claim ~~[[44]]~~ 41 wherein said linear, bearing includes first and second linear guiding rails secured to an overhead beam supported over said work piece table, and, for each slide, a plurality of bearing slide members each attached to said slide and constrained for sliding movement along one of said linear guiding rails.

49. (Previously presented) The system of Claim 41, wherein said ganged set of a plurality of spindles comprises four spindles.